

REMARKS

In the Office Action dated September 11, 2003, claims 4, 5, 7, 17, 22, and 23 were rejected under 35 U.S.C. § 112, ¶ 2; and claims 1-14 and 17-19 were rejected under § 102 over U.S. Patent No. 5,933,838 (Lomet).

Applicant acknowledges the indication that claims 15 and 16 would be allowable if rewritten in independent form.

REJECTIONS UNDER 35 U.S.C. § 112, ¶ 2

Claims 4 and 17 have been amended to address the § 112 rejections of those claims.

With respect to the rejections of claims 22 and 23, it is respectfully submitted that claims 22 and 23 are not confusing. Claim 22 recites returning a second row in response to a read operation under a first condition. In this claim, the terms "returning the second row in response to a read operation" refers to providing the second row as a response to the read operation. The "returning" act has nothing to do with removing of such a row, as noted in the Office Action. Therefore, it is respectfully submitted that claims 22 and 23 are clear.

Withdrawal of the § 112 rejections is respectfully requested.

REJECTION UNDER 35 U.S.C. § 102

It is respectfully submitted that Lomet does not disclose the subject matter in claim 1. The Office Action pointed to the object table 122 disclosed in Figure 11 of Lomet as being the table recited in claim 1. The Office Action then pointed to the data structure 130 in the object table 122 as being the first row containing a before image, and the data structure 128 in the object table 122 as being the second row containing an after image. It is respectfully submitted that the data structures 130 and 128 in the object table 122 of Lomet do not contain a before image or an after image as recited in claim 1. Note that in claim 1, the first row contains a before image representing data before *a data modification operation*, and the second row contains an after image representing data processed by *the data modification operation*.

In Lomet, the data structure 128 is part of an entry 124 for an application object A, and the data structure 130 is part of an entry 126 for a data object O. Lomet, 18:46-50. The application object contains an application state (i.e., address space). Lomet, 5:41-46, 6:33-40, 18:41-45. On the other hand, data objects contain data. Lomet, 18:33-45. Thus, the information contained in the data structures 128 and 130 are completely different types of information--the data structure 128 contains information for an application object, while the data structure 130 contains information for a data object. Therefore, the data structures 128 and 130 cannot contain before and after images as recited in claim 1.

Withdrawal of the anticipation rejection of claim 1 is respectfully requested.

The claims dependent from claim 1 are allowable for at least the same reasons. Moreover, with respect to claim 4, the data structures 128 and 130 are not associated with *one* row identifier. The objectID for the data structure 128 is for an application object, while the objectID for the data structure 130 is for the data object. The objectIDs are necessarily different identifiers because they identify different types of objects.

With respect to dependent claim 5, Lomet fails to disclose the table containing state identifiers to identify a before image state of the first row and an after image state of the second row.

With respect to claim 6, Lomet fails to disclose a data modification operation performed in a transaction having one or more requests, where the first row contains *a transaction* before image and a third row containing *a request* before image. No such distinction between images stored for a transaction and for a request is mentioned anywhere in Lomet.

With respect to claim 7, Lomet does not disclose a module to transition the state of each row based on a data manipulation command. Transitioning the state of each row refers to changing the state of the row. The cited passage in column 33, lines 56-60, of Lomet refers only the assignment of a state ID--no reference is made to transitioning the state of the state ID.

Claims 8 and 9 refer to returning data in response to a read request under different conditions. The data in the second row is provided in response to a read request under a normal condition, and data in the first row is provided in response to a read request under

an abort condition. Returning different rows in response to a read request under different conditions is not disclosed by Lomet. Loading of data into the data structures 128 and 130 do not constitute returning data in first and second rows in response to a read request under different conditions.

With respect to claim 10, Lomet fails to disclose a rollback module to mark the first row as containing a current image (rather than a before image) in response to an abort condition. No such marking of a first row is performed by Lomet.

With respect to claim 12, Lomet fails to disclose a table having a *first* row identifier associated with the first and second rows--this implies that both the first and second rows are associated with the same first row identifier. The data structures 128 and 130 in Lomet are associated with different objectIDs.

With respect to claim 13, Lomet fails to disclose a mutation identifier associated with the first row identifier to identify that a modification operation is occurring with respect to one or more rows associated with the first row identifier. With respect to claim 14, Lomet fails to disclose that the mutation identifier changes value with each new modification operation.

With respect to claim 17, Lomet fails to disclose a module to return a row based on the mutation identifier and state identifier information. Contrary to the assertion in the Office Action, loading a row is not the same as returning a row.

The rejections of claims 18 and 19 are also improper. The Office Action identified the dirty flag as constituting both the active mutation identifier list (claim 18) and the abort mutation identifier list (claim 19). This reading of claims 18 and 19 onto Lomet is erroneous.

In view of the foregoing, allowance of claims 1-19 is respectfully requested.

Independent claim 20 is also allowable over Lomet, since Lomet fails to disclose storing data in rows of a table, and in response to a data modification operation of a first row, marking the first row as a before image row containing data before the start of the data modification operation, and creating a second row as an after image containing data process by the data process modification operation.


Independent claims 28 and 29 are similarly allowable over Lomet. Claims dependent from claims 20 and 28 are also allowable over Lomet.

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In view of the foregoing, all claims are in condition for allowance, which action is respectfully requested. The Commissioner is authorized to charge any additional fees, including extension of time fees, and/or credit any overpayment to Deposit Account No. 50-1673 (9223).

Respectfully submitted,

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Dan C. Hu, Reg. No. 40,025
TROP, PRUNER & HU, P.C.
8554 Katy Freeway, Suite 100
Houston, TX 77024
713/468-8880 [Ph]
713/468-8883 [Fax]